

### **Conference Program**



### Advances in Materials Science

August 31 to September 4, 2009

Radisson SAS Alcron Hotel
Prague, Czech Republic

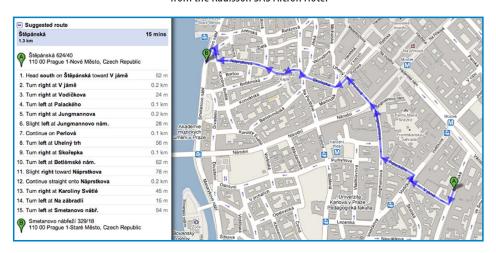
http://www.sandia.gov/NNSA/russia/conference.html



### Sunday, August 30 5:00 to 7:00 P.M. Welcome Reception and Registration

Monday, August 31
7:00 P.M.
Business Dinner at the Bellevue Restaurant

## Walking directions to the Bellevue Restaurant, Smetanovo nabr.18 from the Radisson SAS Alcron Hotel





### **MONDAY AUGUST 31**

8:15 to 9:00 a.m. Welcome and Opening Remarks: Sandia National Laboratories, U. S. National Nuclear Security Administration, Russia Representatives

Se	Session 1, Aging of Materials Session Chair, Brandon Chung, Lawrence Livermore National Laboratory, Livermore, California, USA				
Time	Presentation Title	Authors	Institution		
9:00 to 9:25 a.m.	Modeling of Plutonium Aging	V. Dremov, A. Karavaev, F. Sapozhnikov, M. Vorobyova, G. Ionov, V. Anisimov, M. Korotin, A. Shorikov, M. Zocher, D. Preston	All Russian Institute of Technical Physics (VNIITF), Snezhinsk, Russia		
9:25 to 9:50 a.m.	Spectroscopic Signature of Aging in δ-Pu(Ga)	J. Tobin, SW. Yu, B.W. Chung	Lawrence Livermore National Laboratory, Livermore, CA, USA		
9:50 to 10:15 a.m.	Modeling the Aging and Reliability of Solder Joints	E.A. Holm, M.K. Neilsen, P.T. Vianco, A. C. Kilgo	Sandia National Laboratories, Albuquerque, NM, USA		
		BREAK 10:15 to 10:35			
10:35 to 11:00 a.m.	Polymer Material Thermal Decomposition Model with Intensive Decomposition Area	V.S. Sirenko, E.A. Egorova	All Russian Research Institute of Automatics (VNIIA) Moscow, Russia		
11:00 to 11:25 a.m.	Experimental Characterization of Foams in Fire Environments	K.L. Erickson, R.E. Hogan, K.J. Dowding, V.F. Nicolette	Sandia National Laboratories, Albuquerque, NM, USA		
11:25 to 11:50 a.m.	Numerical Modeling of Heat Transfer in Foams in Fire Environments	R.E. Hogan, K.L. Erickson, V.F. Nicolette, K.J. Dowding	Sandia National Laboratories, Albuquerque, NM, USA		
11:50 to 12:15  Study of Mineral Oil Aging Related to Design Materials of the Neutron Generator  A.S. Sokovishin, Automatics (VNIIA) Moscow, Russia					
	Lunch (provided to all conference attendees) 12:15- 1:30				



### MONDAY, AUGUST 31

Session 2, Computational Methods and Radiation Effects				
	Session Chair, A. V. Mirme	elstein, All Russia Institute of Tech	nical Physics, (VNIITF)	
Time	Presentation Title	Authors	Institution	
1:30 to 1:55 p.m.	Opening remarks: General Survey of JIHT RAS Approach and Results	G.E. Norman	Joint Institute of High Temperatures, (JIHT), Moscow, Russia	
1:55 2:20 p.m.	Accurate Prediction of Dynamic Fracture with Peridynamics	J.B. Aidun, S.A. Silling	Sandia National Laboratories, Albuquerque, NM, USA	
2:20 to 2:45 p.m.	Molecular Dynamic Simulation of Thermodynamic and Mechanical Properties and Behavior of Materials at High Strain Rate	V. V. Dremov, A. Karavaev, F. Sapozhnikov, M. Vorobyova, L. Soulard	All Russian Institute of Technical Physics (VNIITF), Snezhinsk, Russia	
2:45 to 3:10 p.m.	Challenges of, and Variations on, Coupled Atomistic- Continuum Simulation	J.A. Zimmerman	Sandia National Laboratories, Albuquerque, NM, USA	
		BREAK 3:10 to 3:30		
3:30 to 3:55 p.m.	Electrical Effects of Ionizing Radiation on Insulating Materials	H.P. Hjalmarson, K.E. Kambour, R.J. Magyar	Sandia National Laboratories, Albuquerque, NM, USA	
3:55 to 4:20 p.m.	Strongly Coupled Plasma Nanochannel Created by a Fast Single Ion in Condensed Matter	A.V. Lankin, I.V. Morozov, G.E. Norman, S.A. Pikuz Jr., I. Yu. Skobelev	Joint Institute of High Temperatures, (JIHT), Moscow, Russia	
4:20 to 4:45 p.m.	Moleular Dynamics Simulations of Displacement Cascades in GaAs	S. M. Foiles	Sandia National Laboratories, Albuquerque, NM, USA	

7:00 p.m. BUSINESS DINNER AT THE BELLEVUE RESTAURANT

### TUESDAY, SEPTEMBER 1

Session 3: Materials Properties and Failure Session Chair, Dr. Genri Norman, Joint Institute of High Temperatures, Moscow, Russia				
Time	Presentation Title	Authors	Institution	
8:30 to 8:55 a.m.	Modeling Coupled Interaction Between Crack Growth, Diffusion and Chemical Reaction	E. Vilchevskaya, A. Freidin	Institute of Problems in Mechanical Engineering, (IPME), St. Petersburg, Russia	
8:55 to 9:20 a.m.	Influence of Defects Type and Chemical Reaction on Fracture Initiation, Molecular Dynamics Study	A. M. Krivtsov	Institute of Problems in Mechanical Engineering, (IPME), St. Petersburg, Russia	
9:20 to 9:45 a.m.	The Determination of the Small Hydrogen Traps as Nucleus of Fatigue and Destruction	V.A. Polyanskiy, A.M. Polyansky, A.K. Belyaev, Yu.A. Yakovlev	Institute of Problems in Mechanical Engineering, (IPME), St. Petersburg, Russia	
9:45 to 10:10 a.m.	First Principles Study of Site Occupation and Migration of Helium in Beta-Phase Erbium Hydride	C.S. Snow, R.R. Wixom, P.A. Schultz	Sandia National Laboratories, Albuquerque, NM, USA	
10:10 to 10:35 a.m.	Theoretical Model for the Hydrogen-Material Interaction as a Basis for Prediction of the Material Mechanical Properties	D.A. Indeitsev, V.A. Polyanskiy, A.K. Belyaev, A.A. Sukhanov	Institute of Problems in Mechanical Engineering, (IPME), St. Petersburg, Russia	
		BREAK 10:35 to 10:55		
10:55 to 11:20 a.m.	Properties Research of Chemically Deposited Nickel Coatings Modified with Nano Diamonds	S.A. Fedotov, I.P. Ryabchikova, N.S. Fedotova	All Russian Research Institute of Automatics (VNIIA) Moscow, Russia	
11:20 to 11:45 a.m.	Evolving Metallurgical Behaviors In Plutonium From Self-Irradiation	B.W. Chung, K.E. Lema, D.S. Hiromoto	Lawrence Livermore National Laboratory, Livermore, CA, USA	
11:45 to 12:10 p.m.	Isochronal Annealing of Radiation Damage in α- and δ-Pu Alloys	S.K. McCall, M.J. Fluss, B.W. Chung, R.G. Haire	Lawrence Livermore National Laboratory, Livermore, CA, USA	
12:10 to 12:35 p.m. Spiked Alloy Production for Accelerated Aging of Plutonium P. Wilk Laboratory, Livermore, CA,				
LUNCH (provided to all conference attendees) 12:35 to 1:30				



### TUESDAY, SEPTEMBER 1

TUESDAT, SEPTEMBER I				
Session 4: Deformation and Computational Methods Session Chair: J. Aidun, Sandia National Laboratories, Albuquerque, New Mexico, USA				
Time	Presentation Title	Authors	Institution	
1:30 to 1:55 p.m.	Structural Changes in Metals During High-Rate Deformation	A.M. Podurets, V.A. Raevsky, M.I. Tkachenko, A.N. Baladina, I.N. Kondrokhina, O.N. Ignatova, A.I. Lebedev, V.G. Khanzhin, J. Petit, M.A. Zocher	All Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia	
1:55 to 2:20 p.m.	Spall and Shear Fractures in the Spherically Converging Shells of Iron and Steels: Measurements of Energy and Residual Strain	E.A. Kozlov, S.A. Brichikov, V.G. Vildanov, D.M. Gorbachev, D.T. Yusupov	All Russian Institute of Technical Physics (VNIITF), Snezhinsk, Russia	
2:20 to 2:45 p.m.	DFT Studies of Electronic Excitation Effects: Crystal Lattice Stability, Non- Adiabatic Transitions	V.V. Stegailov	Joint Institute of High Temperatures, (JIHT), Moscow, Russia	
2:45 to 3:10 p.m.	Study of the Volume- Collapse Phase Transitions in F-Electron Materials	A.V. Mirmelstein, E.S. Clementyev, O.V. Kerbel	All Russian Institute of Technical Physics (VNIITF), Snezhinsk, Russia	
		BREAK 3:10 to 3:30		
3:30 to 3:55 p.m.  Method of Cluster Dynamics for Simulation of Dynamic Processes of Continuum Mechanics		I.A. Davydov, V.N. Piskunov	AAII Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia	
3:55 to 4:20 p.m.	Density and Nonideality Effects in Plasmas	A.V. Lankin, G.E. Norman	Joint Institute of High Temperatures, (JIHT), Moscow, Russia	
4:20 to 4:45 p.m.	Self-Diffusion in Mo Using the AM05 Density Functional	T.R. Mattson, N. Sandberg, R. Armiento, A.E. Mattson	Sandia National Laboratories, Albuquerque, NM, USA	
4:45 to 5:10 p.m.	Thermo-Mechanical Effects in Perfect Crystals with Arbitrary Multibody Potentials	V.A. Kuzkin, A.M. Krivstov	Institute of Problems in Mechanical Engineering, (IPME), St. Petersburg, Russia	



### WEDNESDAY, SEPTEMBER 2

Session Ch	Session 5: Materials Response to Dynamic Loading I Session Chair: O.N. Ignatova, All-Russian Scientific Research Institute of Experimental Physics (VNIIEF)				
Time	Presentation Title	Authors	Institution		
8:30 to 8:55 a.m.	A Wide-range Equation of State of Water	V.V. Dremov, A.T. Sapozhnikov, M.A. Smirnova, E.E. Mironova	All Russian Institute of Technical Physics (VNIITF), Snezhinsk, Russia		
8:55 to 9:20 a.m.	On the Universal Behavior of Some Organic Compounds Under Compression	B.A. Nadykto	All Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia		
9:20 to 9:45 a.m.	Shock Induced Plasticity in Al, Cu and Al-Cu Alloys	A.V. Yanilkin, A. Yu. Kuksin, G.E. Norman, V.V. Stegailov	Joint Institute of High Temperatures, Moscow, Russia		
9:45 to 10: 10 a.m.	Wide-range High-Strain- Rate Shear Strength Model for Metals	S.S. Nadyozhin, O.N. Ignatova, V.A. Rayevsky, V.P. Soloviev	All Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia		
	BREAK 10:10 to 10:30				
10:30 to 10: 55 a.m.	Static Material Strength Determined Using a DAC	H. Cynn, W.J. Evans, J.P. Klepeis, M.J. Lipp, P. Liermann, W. Yang	Lawrence Livermore National Laboratory, Livermore, CA, USA		
10:55 to 11:20 a.m.	Measurement of Sound Velocities in Shock- Compressed Tin Under Pressures up to 150 Gpa	M.V. Zhernokletov, A.E. Kovalev, V.V. Komissarov, M.A. Zocher, F.J. Cherne	All Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia		
Determination of Longitudinal And Bulk Sound Velocities In Natural Uranium Under Shock-Wave Loading  Determination of Longitudinal And Bulk Sound Velocities In Natural Uranium Under Shock-Wave Loading  A.V. Fedorov, A.L. Mikhaylov, S.A. Finyushin, D.V. Nazarov, Institute of Experimental Physi (VNIIEF), Sarov, Russia					
11:45 to Shock Wave Front for B.A. Nadykto Institute of Exp			All Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia		
LUNCH (provided to all conference attendees) 12:10 to 1:00					



### THURSDAY, SEPTEMBER 3

10:10 to 10:35 a.m.  Dynamic Strength Experiments  Break 10:35 to 10:55  10:55 to 11:20 a.m.  Deviatoric Constitutive Model: Domain of Strain Rate Validity  11:45 a.m. to 12:10 to 12:10 to  Accurate Direct Eulerian Laser  J. V. Bernier  R.E. Rudd, R. C. Becker, J. V. Bernier  R.M. Cavallo  Lawrence Livermore National Laboratory, Livermore, CA, USA  All Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia  Los Alamos National Laboratory, Los Alamos, NM, USA  Institute of Problems in Mechanical Engineering, (IPME), St. Petersburg, Russia  Los Alamos National Laboratory, St. Petersburg, Russia  Los Alamos National Laboratory, St. Petersburg, Russia	Session 6: Materials Response to Dynamic Loading II						
Modeling the Interconnections Between a Structural Transformation Front and a Growing Crack PEM Simulation of Fatigue Damage, Crack Nucleation and Growth in a Pre-Damaged Material Solid-State Rayleigh-Taylor Experiments Incompany Laser J. V. Bernier Incompany Laser J. V. Bernier Incompany Laboratory, Livermore, CA, USA  10:10 to 10:20 a.m. Dynamic Strength Experiments Properties on Perturbation Growth in Tantalum Preston  10:20 to Deviatoric Constitutive Model: Domain of Strain Rate Validity Model: Domain of Strain Rate		Session Chair: A. K. Belyaev		ical Engineering (IPME)			
8:55 to 9:20 a.m. Interconnections Between a Structural Transformation Front and a Growing Crack  9:20 to 9:45 a.m. FEM Simulation of Fatigue Damage, Crack Nucleation and Growth in a Pre-Damaged Material  9:45 to 10:10 a.m. Solid-State Rayleight Taylor Experiments In Vanadium at Mbar Pressures at the Omega Laser  10:10 to 10:10 to 10:25 to 11:20 a.m. Properties on Perturbation Growth in Tantalum  10:20 to 11:20 to 11:20 to 12:10 to 12:10 p.m. Modeling and Simulation of Thermo-Acousto-Elastic Plastic Flow In Complex Rheology  Accurate Direct Eulerian Simulation of Dynamic Elastic-Plastic Flow  10:10 to 12:35 p.m. Same Accurate Direct Eulerian Simulation of Dynamic Elastic-Plastic Flow  10:10 to 12:20 to 12:35 p.m. Same Accurate Direct Eulerian Simulation of Dynamic Elastic-Plastic Flow  10:10 to 12:35 p.m. Same Accurate Direct Eulerian Simulation of Dynamic Elastic-Plastic Flow  10:10 to 12:20 to 12:35 p.m. Same Accurate Direct Eulerian Simulation of Dynamic Elastic-Plastic Flow  10:20 to 12:10 to 12:35 p.m. Same Accurate Direct Eulerian Simulation of Dynamic Elastic-Plastic Flow  10:20 to 12:10 to 12:35 p.m. Same Accurate Direct Eulerian Simulation of Dynamic Elastic-Plastic Flow  10:20 to 12:10 to 12:35 p.m. Same Accurate Direct Eulerian Simulation of Dynamic Elastic-Plastic Flow			V.V. Pisarev, V.V. Stegailov, A.V.	High Temperatures, (JIHT),			
9:20 to 9:45 a.m.  Fatigue Damage, Crack Nucleation and Growth in a Pre-Damaged Material  Solid-State Rayleigh—Taylor Experiments in Vanadium at Mbar Pressures at the Omega Laser  10:10 to 10:35 a.m.  Dynamic Strength Experiments 11:20 a.m.  Influence of Dynamic Properties on Perturbation Growth in Tantalum  11:20 to 11:45 a.m.  Deviatoric Constitutive Model: Domain of Strain Rate Validity 10:10 pm.  Deviatoric Constitutive Model: Domain of Strain Rate Validity 10:10 to 11:45 a.m.  Accurate Direct Eulerian Simulation of Dynamic Elastic Plastic Hasica Plastic Flow  12:10 to		Interconnections Between a Structural Transformation Front and	A.B. Freidin				
9:45 to 10:10 a.m.    Taylor Experiments in Vanadium at Mbar Pressures at the Omega Laser    10:10 to 10:35 a.m.    Dynamic Strength Experiments    10:55 to 11:20 a.m.    Deviatoric Constitutive Model: Domain of Strain Rate Validity    11:45 a.m. to 12:10 p.m.    Accurate Direct Eulerian Simulation of Dynamic Strength R.M. Semenov, M.D. Sterlin St. Petersburg, Russia    Accurate Direct Eulerian Simulation of Dynamic Elastic-Plastic Flow    Taylor Experiments    K.T. Lorenz, R. M. Cavallo    K.T. Lorenz, R. M. Cavallo    Lawrence Livermore National Laboratory, Livermore, CA, USA    Lawrence Livermore National Laboratory, Laboratory, Livermore, CA, USA    Lawrence Liver    Lawrence Liver    Lawrence Liver		Fatigue Damage, Crack Nucleation and Growth in a Pre-Damaged		Mechanical Engineering, (IPME),			
10:35 a.m. Experiments    Break 10:35 to 10:55	9:45 to 10:10 a.m.	Taylor Experiments in Vanadium at Mbar Pressures at the Omega	K.T. Lorenz, R. M. Cavallo, S.M. Pollaine, S. T. Prisbrev, R.E. Rudd, R. C. Becker,				
10:55 to 11:20 a.m.  Influence of Dynamic Properties on Perturbation Growth in Tantalum  Deviatoric Constitutive Model: Domain of Strain Rate Validity  11:45 a.m. to 12:10 to 12:10 to 12:10 to 12:35 p.m.  All Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia  N.A. Zocher, V.A. Raevsky, O.N. Ignatova  M.A. Zocher, V.A. Raevsky, O.N. Ignatova  Deviatoric Constitutive Model: Domain of Strain Rate Validity  D.A. Indeitsev, V.N. Naumov, B.N. Semenov, M.D. Sterlin Simulation of Dynamic Elastic Plastic Flow  J.R. Kamm, J.W. Walter Los Alamos National Laboratory, Mechanical Engineering, (IPME), St. Petersburg, Russia  Los Alamos National Laboratory, Los Alamos National Laboratory, St. Petersburg, Russia	10:10 to 10:35 a.m.		R.M. Cavallo				
10:55 to 11:20 a.m. Properties on Perturbation Growth in Tantalum  Deviatoric Constitutive Model: Domain of Strain Rate Validity  11:45 a.m. to 12:10 p.m.  A.I. Lebedev, S.S. Nadezhin, A.M. Podurez, B.A. Raevsky, V.P. Solov'ev, M.A. Zocher, D. Preston  M.A. Zocher, V.A. Raevsky, O.N. Ignatova  M.A. Zocher, V.A. Raevsky, O.N. Ignatova  Modeling and Simulation of Thermo-Acousto-Elastic Waves in Solids of Complex Rheology  A.I. Lebedev, S.S. Nadezhin, A.M. Podurez, B.A. Raevsky, V.P. Solov'ev, M.A. Zocher, D. Preston  M.A. Zocher, V.A. Raevsky, O.N. Ignatova  Modeling and Simulation of Thermo-Acousto-Elastic Waves in Solids of Complex Rheology  J.A. Indeitsev, V.N. Naumov, B.N. Semenov, M.D. Sterlin  A.I. Lebedev, S.S. Nadezhin, A.M. Podurez, B.A. Raevsky, V.P. Solov'ev, M.A. Zocher, D. Preston  M.A. Zocher, V.A. Raevsky, O.N. Ignatova  Los Alamos National Laboratory, St. Petersburg, Russia  J.R. Kamm, J.W. Walter  Los Alamos National Laboratory, Los Alamos, NM, USA			Break 10:35 to 10:55				
11:45 a.m. Model: Domain of Strain Rate Validity  11:45 a.m. to 12:10 p.m.  12:10 to 12:35 p.m.  Model: Domain of Strain Rate Validity  Modeling and Simulation of Thermo-Acousto-Elastic Waves in Solids of Complex Rheology  D.A. Indeitsev, V.N. Naumov, B.N. Semenov, M.D. Sterlin Structure of Problems in Mechanical Engineering, (IPME), St. Petersburg, Russia  J.R. Kamm, J.W. Walter Los Alamos National Laboratory, Los Alamos National Laboratory, Los Alamos NM, USA	10:55 to 11:20 a.m.	Properties on Perturbation Growth in	A.I. Lebedev, S.S. Nadezhin, A.M. Podurez, B.A. Raevsky, V.P. Solov'ev, M.A. Zocher,	Institute of Experimental Physics			
11:45 a.m. to 12:10 p.m. of Thermo-Acousto- Elastic Waves in Solids of Complex Rheology  12:10 to 12:35 p.m. Elastic-Plastic Flow  Of Thermo-Acousto- D.A. Indeitsev, V.N. Naumov, B.N. Semenov, M.D. Sterlin St. Petersburg, Russia  D.A. Indeitsev, V.N. Naumov, Mechanical Engineering, (IPME), St. Petersburg, Russia  Los Alamos National Laboratory, Los Alamos, NM, USA	11:20 to 11:45 a.m.	Model: Domain of Strain					
12:35 p.m. Simulation of Dynamic Laboratory, Los Alamos, NM, USA Los Alamos, NM, USA	11:45 a.m. to 12:10 p.m.	of Thermo-Acousto- Elastic Waves in Solids of		Mechanical Engineering, (IPME),			
LUNCH (provided to all conference attendees) 12:35 to 1:30	12:10 to Simulation of Dynamic J.R. Kamm, J.W. Walter Los Alamos National Laboratory,						
	LUNCH (provided to all conference attendees) 12:35 to 1:30						



### THURSDAY, SEPTEMBER 3

Session 7: Materials Response to Dynamic Loading III Session Chair: M. A. Zocher, Los Alamos National Laboratory (LANL)				
Time	Presentation Title	Authors	Institution	
1:30 to 1:55 p.m.	Simulation of Ce Response to Dynamic Loading	A. Petrovtsev, A. Bychenkov, V. Dremov, V. Elkin, G. Kovalenko, D. Shalkovsky, N. Sokolova, D Varfolomeev	All Russian Institute of Technical Physics (VNIITF), Snezhinsk, Russia	
1:55 to 2:20 p.m.	Predictions from the Equation of State of Cerium Yield Interesting Insights into Experimental Results	F.J. Cherne, B.J. Jensen, P.A. Rigg, V.M. Elkin	Los Alamos National Laboratory, Los Alamos, NM, USA	
2:20 to 2:45 p.m.	Features of Cerium Compressibility and Spall Strength in the (Gamma-Alpha) Phase- Transformation Region Under Explosive Loading	V.I. Tarzhanov, et al.	All Russian Institute of Technical Physics (VNIITF), Snezhinsk, Russia	
2:45 to 3:10 p.m.	Study of Phase Transitions in Cerium and Titanium by PVDF Gauge	V.A. Borisenok, V.G. Simakov, M.V. Zhernokletov, M.A. Zocher, F.J. Cherne	All Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia	
		Break 3:10 to 3:30		
3:30 to 3:55 p.m.	Atomistic Modelling of Microstructure Influence on the Spall Strength	P.A. Zhilyaev, A. Yu. Kuskin, G.E. Norman, V.V. Stegailov, A.V. Yanilkin	Joint Institute of High Temperatures, Moscow, Russia	
3:55 to 4:20 p.m.	Effect of Shock Wave and Quasi-Isentropic Loading on the Shear and Spalling Strength of Metals with Natural and Microcrystalline Structure	O.N. Ignatova, I.I. Kaganova, A.B. Kal'manov, A.N. Malyshev, V.I. Skokov, A.M. Podurez, B.A. Raevsky, O.A. Tyupanova, G.A. Salishev, C.V. Razoryonov, M.A. Zocher	All Russian Scientific Research Institute of Experimental Physics (VNIIEF), Sarov, Russia	
4:20 to 4:45 p.m.  Spall Fracture and Compaction in Natural Uranium Under Shock-Wave Loading  V.A. Tyupanova, S.S. Nadezhin, A.N. Ignatova, V.I. Skokov, V.N. Knyazev, V.I. Skokov, V.N. Knyazev, V.A. Raevsky, N.A. Yukina  All Russian Scientific Resolution (VNIIEF), Sarov, Russian (VNIIEF), Sarov, Russian (V				
4:45 to 5:15 Concluding Remarks: NNSA, Sandia, Russia Representatives				

### **FRIDAY SEPTEMBER 4**

9:00 to 12:00 Laboratory and Institute Points of Contact meeting. Agenda to be distributed separately.

12:00 to 1:30 (Lunch provided to U.S./Russian POCs, heads of delegations, and NNSA)

1:30 to 4:00 Laboratory and Institute Points of Contact meeting conclusion



### **Meeting Attendees and Affiliations**

### **RUSSIAN ATTENDEES**

NUJSIAN AI TENDEES		
Davydov, I.A.	VNIIEF	Theorist in nanomaterials group
Ignatova, O.N.	VNIIEF	Specialist in dynamic strength of materials
Kovalev ,A. E.	VNIIEF	Physicist working on high temperature shock-induced transitions
Nadykto, B. A	VNIIEF	Principal Scientist in theoretical Equation-of-state group
Nadyozhin, S.S	VNIIEF	Theorist working on material strength
Poduretz, A.M	VNIIEF	Head of metallography and metallophysics group
Safronov, S. E.	VNIIEF	Export Control Specialist
Shapovalova, O.	VNIIEF	Interpreter
Solovyev, V.P.	VNIIEF	First Deputy of RFNC-VNIIEF Director
Raevsky, V.A	VNIIEF	Deputy Director of Gasodynamic Institute
Tupanova, O.	VNIIEF	Specialist working on detonation physics
Vorontsova, O.S.	VNIIEF	Deputy of the Center for International Relations
Zhernokletov, M.V.	VNIIEF	Head of department for experimental high density physics
Avramenko, M.	VNIITF	Deputy Head of Computational Mathematics Division
Dremov, V. V.	VNIITF	Senior Scientist working on molecular-dynamics modeling of
		material properties
Mirmelstein , A.V.	VNIITF	Senior Scientist studying actinide properties
Petrovtsev, A. V.	VNIITF	Head of Department working on theoretical models of material properties
Talantova, L.	VNIITF	Head of Department for International Relations and Scientific Cooperation
Tarzhanov, V. I	VNIITF	Senior Scientist running gas dynamics experiments to investigate
		material properties
Fedotov, S.	VNIIA	Post-graduate, Head of Research Laboratory, materials science (coatings,
		paints, magnetic materials)
Sirenko, V.	VNIIA	Candidate of science, Head of Research Laboratory, climatic tests, modeling of
		abnormal situations
Sokovishin, A.	VNIIA	Candidate of science, Deputy Chief Designer, material science and technologies,
		R&D long term and short term planning; Deputy International
		Projects Coordinator
Sviridov, A.	VNIIA	Candidate of science, Deputy Chief Designer, radiation effects in
		materials, MPC&A, general technical issues; International

**Projects Coordinator** 



### **RUSSIAN ATTENDEES** (continued)

Kuksin, A.	JIHT	Researcher; physicist-theorist working on fracture and plasticity under dynamic loading
Norman, G.	JIHT	Department Head; theory and atomistic modeling & simulation of condensed matter and dense plasmas
Stegailov, V.	JIHT	Head of laboratory focused on theory and atomistic modeling & simulation of condensed matter at extreme conditions
Yanilkin, A.	JIHT	Researcher; physicist-theorist working on plasticity and fracture under dynamic loading
Zhilyaev, P.	JIHT	Junior researcher working on atomistic modeling & simulation of dislocations
Belyaev, A.	IPME	Deputy Director; Professor
Friedin, A.	IPME	Head of Laboratory of Math; methods in mechanics of materials
Indeitsev, D.	IPME	Director; Research Institute of Problems in Mechanical Engineering
Korolev, I.	IPME	Ph.D student
Krivtsov, A. M.	IPME	Head of Laboratory for Discrete Models in Mechanics
Kuzkin V.	IPME	Ph.D student
Polyansky, V. A.	IPME	Professor of Mechanics; St. Petersburg State Polytechnic University
Vilchevskaya, E.	IPME	Senior Researcher; Laboratory of Mathematical Methods in

#### **US ATTENDEES**

Aidun, J.	SNL	Manager; Accurate Prediction of Dynamic Fracture with Peridynamics
Arzigian, J.	SNL	Physicist; International collaborations/science and technology
Bickel, T.	SNL	Principal Program Director; Nuclear Weapons Science & Technology Programs; Chemical Engineer
Erickson, K.	SNL	Chemical Engineer; thermal decomposition of organic materials
Foiles, S.	SNL	Physicist; Molecular Dynamics simulations of materials properties, technical conference organizer
Garber, R	SNL	ASC Program Communications Director & ASC Russia Program Project lead; English
Hajalmarson, H.	SNL	Technical Staff
Hogan, R.	SNL	Mechanical Engineer; systems thermal modeling and simulation
Holm, E.	SNL	Distinguished Member of Technical staff; Mesoscale modeling of microstructure evolution; technical conference organizer
Humble, L.	SNL	Protocol Officer; Conference coordination
Jones, R.	SNL	Mechanical Engineer; computation mechanics
Maenchen, J.	SNL	Manager NW S&T Program Strategic Directions; Conference POC
Mattsson, T.	SNL	Physicist; first-principles simulations in materials science and high-energy density physics.



### **US ATTENDEES** (continued)

Sheglova-M <sup>c</sup> Mahan,L Snow, C. Zimmerman, J.	SNL SNL SNL	Interpreter Scientist; condensed matter physics and radiaition damage in materials Scientist; atomistic simulation and multi-scale methods
Cherne, F.	LANL	Technical staff; Predictions from the equation of state of cerium yield interesting insights into experimental results
Gerdova, E.	LANL/ VNIIEF	Interpreter
Kamm, J.	LANL	Project leader; Applied Mathematics
Reinovsky, R.	LANL	Program Manager of Science Campaign #1 and for US/Russian S&T Program; Pulsed Power for Shock Physics
Zocher, M.	LANL	Technical Staff; Computational mechanics; Deviatoric Constitutive Model: Domain of Strain Rate Validity
Cavallo, R.	LLNL	Physicist; dynamic strength experiments
Chung, B.	LLNL	Associate Program Leader in nuclear materials program focused on metallurgy and analytical chemistry
Cynn, H.	LLNL	Physicist; sure diamond anvil cell work using x-ray diffraction to determine EOS of various materials, Static material strength determined using a DAC
McCall, S.	LLNL	Physicist; physical properties of actinides, including magnetism, low temperatures, and highly correlated electron systems
Remington, B.	LLNL	Physicist; solid-state material dynamics at ultrahigh pressures and strain rates, driven on high power lasers
Schilling. O.	LLNL	Physicist; turbulence modeling, high energy density physics; Russia Program lead
Tobin. J.	LLNL	Lead PI of the DOE Office of Basic Energy Science Project: Investigations of Electron Correlation in Complex Systems; International meeting on Actinides and Pu The Spectroscopic Signature of Aging in delta-Pu (Ga) organizer.
Wilk, P.	LLNL	Radiochemist with the plutonium chemical processing group
Kusnezov, D.	NNSA	Head of delegation/ NNSA Director of the Office of Research & Development for National Security Science & Technology; Physicist
Lewis, E. McDaniel, D.	NNSA Sandia/	Administrative support to NNSA-10
	NNSA	Senior Scientist assigned to NNSA Science and Technology collaborations



### **NOTES**



Statue of St. Wenceslas riding an inverted horse. It is located in the entrance to the Lucerna theater on the southeast side of Wenceslas Square. Sculpture by David Cerný in 1992, executed in foam, but made to resemble patinated bronze.



### NOTES



Oldest sculpture on Charles Bridge. St. John of Nepomuk. Born as John Wolfin, he was canonized in 1729 as patron saint of discretion, floods and slander.

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NOTES



This interesting bronze statue by sculptor Jaroslav Rona is based on a vivid description that appears in Franz Kafka's early short story "Description of a Struggle." Kafka wrote of a young man riding on another man's shoulders through the streets of Prague. In Rona's work, that figure is Kafka himself sitting astride a headless man.

